

Hobbies

WEEKLY

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Price Threepence

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WE wonder if any of our readers have ever thought what a charming little model a Lych Gate would make. These old-time entrances to the Church existed centuries ago, and indeed many can still be seen around the countryside.

We have heard of craftsmen and other enthusiasts making a study of, and measuring drawings and details of old windmills, and we wonder if the same thought and idea have ever been given to our picturesque old lych gates. Here then is perhaps the birth of a new hobby, the collecting of pictures, photographs and sketches with written data included of these picturesque oaken structures.

Consider taking this interesting

A MODEL LYCH GATE

pastime a step further, and building a miniature lych gate in wood. Ordinary deal or pine answers splendidly for this type of model making if treated with oak stain. The simple nature of the shaping and cutting should not deter the craftsman.

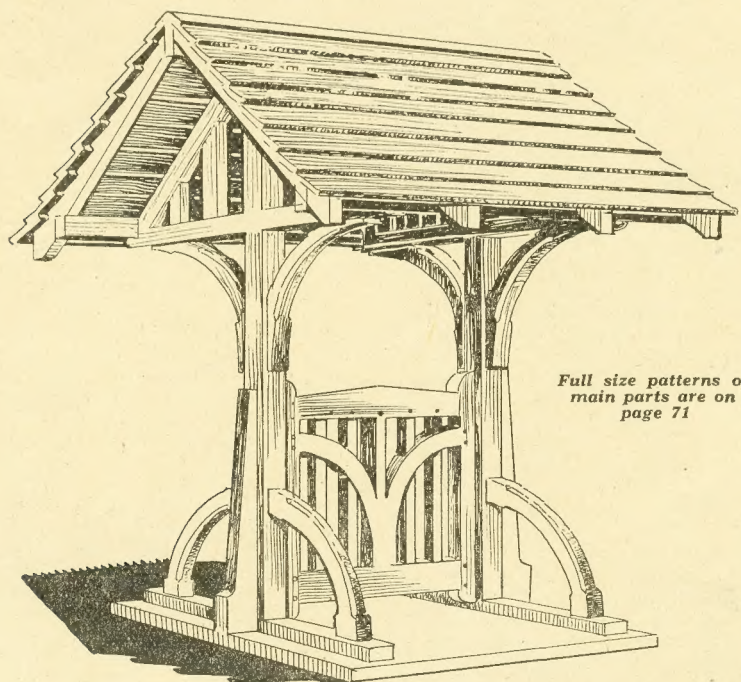
The type shown, however, may be said to be based upon the general construction of many such gates round our countryside. Here, the two main uprights are given with sill pieces and front curved struts and braces. Above we have the gables filled with simple uprights to support ridge and rafters. The roof itself may represent weatherboarding or tiles.

In an actual gateway of course there would be generally side walls of stone or a post and rail fencing covered perhaps with featheredge boarding. In our model, however, we do not show these for obvious reasons, and the sloping buttress-like tapered supports running up to the main posts make a very suitable side finish.

Hinged Gate

The actual gate could be hinged to one side post if desired to open realistically, but we do not think this need be followed in the case of the model. To help workers, we have included all shaped parts as simple outline patterns on a whole page of this issue.

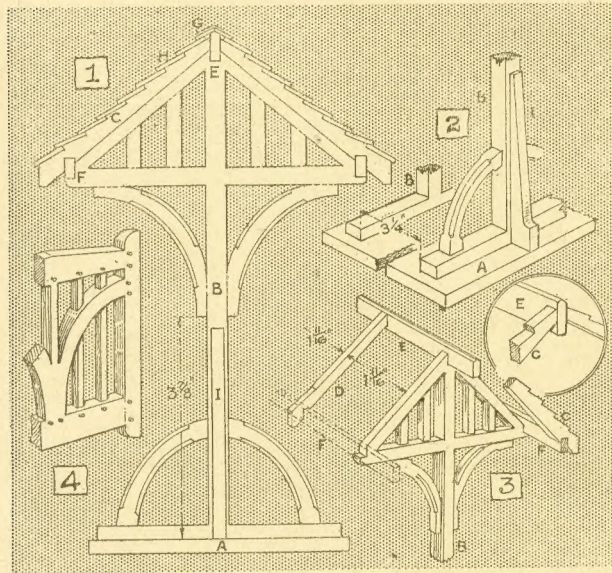
Study the patterns and the details given so a good knowledge of the several parts may be gained and their method of construction and assembly. A base board measuring 5ins. by 4½ins. should first be made from a piece of ½in. wood, and upon this the side uprights B may be erected. On account of shape of the uprights, and the limited size sheet, we show one



Full size patterns of
main parts are on
page 71

only of the uprights and this again in two parts.

It will be necessary therefore in sticking down the two parts B to the $\frac{3}{4}$ in. wood, to follow the diagram, Fig. 1, which gives the measurement of $3\frac{3}{4}$ ins. from the bottom of the curved struts to the extreme lower edge of the sole-plate. When one complete end B has been cut out, clean up the wood, and any rough edges, and use it as a template for producing the second end upright.



To get the correct idea of the widths and thicknesses of the braces and supports and also of the filling uprights in the gables, a certain amount of paring and cutting away of these parts must be undertaken. The meaning of this will be apparent from the details, Figs. 2 and 3. The dotted lines on Fig. 1 give a guide to what edges must be cut down before the other flat surfaces are pared away into it. A $\frac{1}{4}$ in. chisel or just an ordinary sharp pocket-knife will do

the trimming away cleanly and easily.

The upright rails of the gate, shown in detail on the pattern sheet, will be carried out in the same way, the sectional detail, Fig. 4, showing the uprights cut in, while the curved braces stand flush with the outside frame.

The Gate

The projecting dowel-pin heads may be represented by driving in stout wire-nails for a depth of about $\frac{1}{2}$ in. and then cutting off the heads and filing a clean top. Shallow holes must be bored before the nails are gently tapped in to avoid splitting the wood.

The gate is cut from $\frac{1}{2}$ in. wood. It will be noted in Fig. 1, 2, etc. that the curved members of the end uprights have chamfers worked on their edges. These again are cut down with the chisel or knife, the "stopped" ends being first cut down and the chamfers

finally brought up to them to avoid any splitting. The two ends are glued to the base, and spaced as shown in Fig. 2, with perhaps one or two countersunk screws put in from below to make a firm job while the roof and its members are being assembled.

The ridge board, E, and the two plates, F, will next be made in $\frac{3}{16}$ in. wood, and glued to the uprights in the positions shown in Fig. 1 and 3. Lengths and widths are given on the pattern sheet. The plates and ridge

are next connected up by the sloping rafters C and D (Fig. 3), the actual outline of these being given on the pattern sheet. Four each of both C and D must be cut, the serrated top edges of pieces C being carefully and accurately cut in to receive the boarding H.

Note the four rafters, D, will have their top edges plain, so the boarding here merely rests upon them and is thus held in place. The enlarged diagram in Fig. 3 shows how the end rafters C come flush against the ridge board at the extreme end.

All the main structure should now be firmly glued together, and it only remains to add the two roof slopes. Their length of $6\frac{1}{2}$ ins. allows for an overlap of $\frac{1}{2}$ in. beyond the ends of rafters C at each side. Each slope of the roof is made of eight pieces of thin wood, as H on the pattern sheet, and one piece G. The method of their arrangement is shown clearly in Fig. 1.

Assembly

Start laying and gluing the lower-most piece, that at the eaves of the roof slope, and then keep adding the remainder.

All are fixed in their respective recesses as it were, until the ridge is reached. Here a narrower board, G, will be laid and glued to the top back edge of the topmost member H.

Finally a ridge may be represented by bending at an angle a stout piece of card and gluing this to the boarding to cover the top joint of same and to make a neat finish at the ridge. In gluing on the members H to the rafters lay the model on its side at completion and put a bead of glue behind each board H so that point of contact to the rafters D is well made. Again, little gluing blocks of wood may be added at inconspicuous places within the roof to make all rigid and strong.

The underside of the roof slopes should be stained or otherwise finished just the same as the outside surfaces. A piece of green baize should be glued to the underside of the base.

WHAT on earth are cycling shoes? Does one ride a bike any better through wearing these shoes? Quite frankly, I have never heard of these shoes before in my life, and I have been a cyclist for many years.

THE shoes appear to be of recent invention, and, to judge from the appearance, an idea which doubtless originated in America. The shoes are like ordinary brown, light-weight shoes, with black coverings on the uppers, at the heel, toes and sides, white eyelets and large, turn-over tongue flaps which cover the lacing. These flaps prevent rain entering through the eyelets, and so far as we know, the shoes make no difference to me's cycling, unless they speed up the dash homewards to get them off—after all the people staring!

CHROMIUM-PLATING is supposed to be rust-proof, so when I stored away my machine, with its new handle-bars, in its shed last year, I merely gave the bars a light smearing of Vaseline. To my disgust, I found that the metal had become corroded with a greenish encrustation which I removed with fine emery cloth; this spoiled the high finish, and I find that the bars are apt to rust easily. I don't think much of chromium-plating; it is not much better than nickel-plating.

CHROMIUM-PLATING is rust-proof, but liable to corrode, like brass, copper and similar metal, but only under severe conditions. You must have a rather damp shed. Corroding does not imply rusting. Corrosion is simply a "patina"

which is produced by oxidation through dampness. The domes of buildings in cities are greenish; copper always turns this colour. The greenish encrustation on chromium is simply a patina. There was no need to remove it with emery cloth. It comes off easily enough with a metal polish and a soft cloth. The use of emery cloth, although effective, was a drastic measure. It scratched the high finish and removed some of the plating, and we fear you have spoiled your handle-bars which can, however, be re-plated by a local specialist in such matters. We must warn you, however, that chromium does not last forever. It will, in time, become pitted, so that rust gets beneath the thin coating. A rubbing of Vaseline will help to prevent this to some extent.

How to make a start if you think of building A MODEL RAILWAY

THERE are few other hobbies than that of Model Railways which offer such unlimited scope for ingenuity and individuality, as well as for educative amusement. It does not call for any exceptional skill on the part of its followers, and yet is absorbing in its versatility. Mechanics, electricity, woodwork, metalwork and a whole host of other crafts are pressed into its service and get their share of the model railwayman's thought and skill.

A model railway may start as a "toy", but if we are really interested in what we are doing, it will gradually develop into a real hobby; in which the railway is always complete, yet never really finished. So let us see

The construction of indoor model railways is again becoming popular as the necessary material becomes available. This is the first of a series of articles by an expert who combines knowledge with reasonable expense.

exactly what is needed to build a model railway without going into any technicalities or discussions as to the superiority of any particular scale or gauge.

In the early stages it will not be possible for the reader to attempt to build his own locomotives, coaches or track, and in point of fact, these items are best bought. It is best to "get something moving" as soon as possible, because the writer has seen so many beginners whose enthusiasm has waned through the time taken making these things.

If track, and at least, an engine are purchased, there is then the urge to lay the former and run the latter, which state of affairs constitutes an embryo railway—after all.

Some readers may already be in the possession of a loco and maybe a few wagons or coaches, together with several yards of either steel or tinplate track which can well make a nucleus of a larger system.

If it is desired to reconstitute a "toy" railway into a thorough-going

"model" railway, of course, the first thing to be done is to arrange matters so the railway has a settled location. A model railway which has to be continually laid and dismantled is unthinkable. No model line worthy of the name was ever really portable—with the exception of the extremely small exhibition models which have been built just to show how small a model railway can be made. So try to find a place where you can lay the tracks once and for all, if continued successful running is desired.

Prepare a Lay-out First

Before actually laying any rails, many hours of planning work with a yard stick and pencil-and-paper should be spent. Never think that this time is wasted, for a model railway put down in a "hit-and-miss" manner can never be really successful. Remember it is easier to re-draw a design than to relay a model line.

As to the ideal situation for a model layout, there is much diversity of opinion. Cellars are generally damp, particularly in summertime; and dampness is the deadly enemy of all models—especially electrically-driven ones. Attics and lofts are tropical in the summer and arctic in the winter. Violent temperature changes are also bad for both the track and the main-springs of clockwork-driven engines.

If the loft is boarded, this state of affairs will be largely mitigated, whilst the condition of the main-springs will be looked after if the locomotives are brought down into the house after running is at an end. In the writer's opinion there is no place to beat the spare bedroom (!) or a box-room; though, of course, the former is all too rare in these exciting times.

Toy Set Differences

If your existing "train set" is of one of the well-known makes, you will possibly have noticed many differences between certain items of equipment in the model and their full-sized counterparts. These differences are very frequently due to the fact that a "toy" railway has to be designed to run in a very limited area; but there is no excuse for using violently out-of-scale lineside accessories.

It is just as easy to make these



Typical small station building suitable for modelling

things to proper scale (i.e., 7 millimetres equalling one foot on the real thing) as to make them either vastly too big or ridiculously small. In these matters, the construction of correctly scaled buildings and accessories for "O" gauge models at the true scale of 7 mms. to one foot, can be undertaken with confidence.

Tool Kit

Only the simplest of tools are needed; in fact, the normal Model-maker's Kit as sold by Messrs. Hobbies Ltd., contains almost all the tools necessary for such work; particularly if the kit is boosted up with a few extra tools from the household tool-box.

If a constructional start is made by laying the track—even a simple "oval"—properly, and ensuring that all the rail-joints—if "tinplate" is being used—are perfectly matched, a great deal of running experience can be gained.

After perfect running has been achieved, the situation of the proposed station or stations, goods-sheds, signal-boxes and other buildings can be plotted in on the base-board of the line itself. All this should be done before any actual building construction is started.

Realism

The ideal of every model railway enthusiast is to make his railway as near like the real thing as possible with the material, tools and means at his disposal. So let this ideal be yours and in its working out you will find that running model railways is one of the most fascinating of all the hobbies, and one which will never die out all the time the full-sized railways are with us.

The next article will deal with the dimensions and constructional methods used in building simple model railway accessories with which you can improve the appearance of your layout. Until then, keep experimenting so you have produced the best possible layout plan you can in the space available.

PREVENTING DAMAGE

WHEN extracting a nail with a pair of pincers on a nicely polished surface it is a little difficult without doing damage. Here is a hint to prevent such an occurrence. Lay a piece of thin wood on the surface so the pincers rest on that when extracting. Any mark will then be made on this piece, taken away again after use.

Another interesting article on radio, explaining HOW RECEIVERS WORK

THE simpler types of radio receiver are not difficult to understand and it is interesting and useful to know just how anything works. It is not necessary to go too deeply into the theory, because a practical amount of knowledge can be gained without this.

Tuned Circuits

A coil of insulated wire resonates to a particular wireless frequency. The more capacity in parallel with the coil, or the greater the number of turns used, the lower is this frequency. (Just as a long pendulum swings more slowly than a shorter one.)

Crystal sets sometimes tune by having a slide-coil to adjust the number of turns, but a more accurate method is to make the capacity variable instead, using a variable condenser, as shown in Fig. 1. With a Medium Wave coil of about 80 turns and a .0005 microfarad condenser the set can tune from about 200 to 550 metres. To get up to Long Waves, a switch is opened, thus adding into circuit about 200 turns—the Long-Wave winding.

A circuit like this allows all signals to pass through to Earth except that to which it is tuned. This particular signal is therefore made to pass through the detector, and is heard in the phones.

A crystal detector is used in Fig. 1. This gives good phone volume on local stations, but cannot amplify. So for distant reception and speaker reproduction, valves are used.

A triode (three-electrode) valve is shown in Fig. 4. The filament is heated from a battery; it then emits electrons which are free to travel about in the vacuum inside the glass bulb. A metal plate (or plates) forms the anode, and this anode attracts the electrons because it is given a positive charge from a second battery—the high tension battery.

To reach the anode, the electrons must pass through the grid, which is a fine wire mesh. When slightly charged positively, it helps to make the electrons shoot across to the anode. But if charged negatively, they cannot pass it to reach the anode at all.

The signal picked up is applied to the grid. It makes the very much stronger electron stream fluctuate. As this stream is really an electric current, and is taken away by a wire from the anode, the weak signal going in comes out much stronger. This is how all valves amplify.

A Valve Circuit

By connecting the coil and con-

denser to A and B in Fig. 2, a two-valve receiver is made. As the grid condenser will not let direct current pass, a slight voltage builds up across the grid leak. This is helped by connecting the latter to L.T. Plus, and aids the electron stream as described.

As the signal is amplified, part can be fed back through the reaction coil and reaction condenser. This coil is coupled to the tuning coil and so increases the signal in the latter, again causing additional amplification.

The choke prevents these radio-frequency signals passing, but allows the audible portion of the signal to go through the primary of the transformer.

Because the secondary has three or four times as many turns as the primary, the signal is amplified three or four times by the transformer. It then reaches the grid of the output valve, where it is amplified as before.

The output valve shown feeds the speaker. It might feed another transformer and a third valve, if more volume were needed.

high-pitched notes more than the lower tones. The triode gives less volume, but slightly better quality.

Connecting a condenser across the speaker, as in Fig. 2, will reduce the high notes. One of about .005 mfd. is generally used with a pentode.

When the L.T. Plus switch is opened, the filaments cool, and no current passes inside the valve. The H.T. battery does not need to be switched off because the valves cannot pass current unless their filaments are heated.

H.F. Stage

Many 3-valvers use one of these, shown in Fig. 3. They amplify the radio signal, passing it on to the detector just as received, but much strengthened.

The choke allows high tension to reach the anode, but makes the radio signals pass through the condenser (which will not pass H.T. current) to the next valve.

Two tuning coils and condensers are

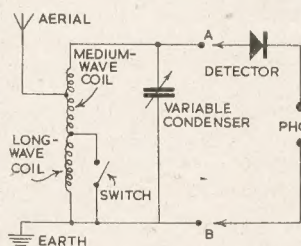


Fig. 1—The tuned circuit

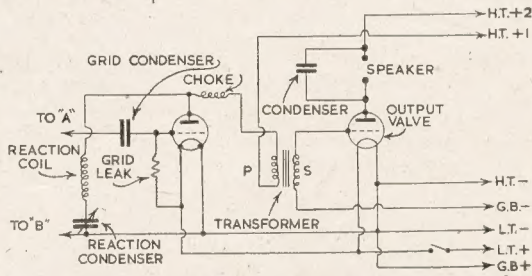


Fig. 3—Diagram of the high frequency stage

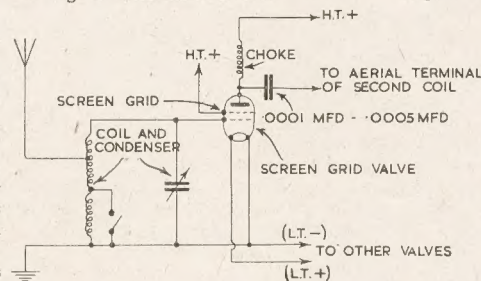


Fig. 2—Illustrating a two-valve circuit

By putting other grids in the valves it is possible to prevent any capacity existing between the first grid and the anode. This makes a Screen Grid valve better able to deal with radio signals. Sometimes a third grid is added to prevent electrons bouncing back from the anode (secondary emission). This is a Suppressor Grid, and the valve is called a Pentode. It amplifies much more than a triode.

In a two valve set, a pentode is often used for the output valve. Though they amplify less, triodes are still used because pentodes amplify

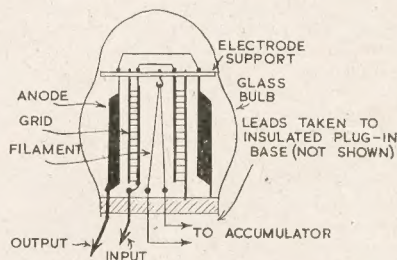


Fig. 4—Details of the valve

now used, one with the High Frequency stage, and one with the detector. This makes tuning much more selective, cutting out unwanted stations. To simplify tuning, both tuning condensers are built on a single operating spindle.

Triodes are not now used in H.F. stages. This is because there is no screen grid to prevent the signal passing back across the condenser formed by the anode and grid electrodes, which would be just the reverse of what is required.

A popular type of hanging line can be made for a KITCHEN CLOTHES AIRER

A CLOTHES airer, of the ceiling type, usually consists of two airer rail ends, made from light metal, four 7ft. wooden rails, a single pulley block and a double pulley block with a hank of braided cord and a cleek. Now, while you can buy the complete set of accessories, it is possible to make up a substitute which is just as good.

Readers who buy a set will still find this article useful. It is, if one has never fitted up a ceiling clothes airer before, a bit of a puzzle to know what to do with the pulleys and the cord. Two pulleys and one length of cord which must raise the airer horizontally,

pegs, are pushed through the rails, near the ends.

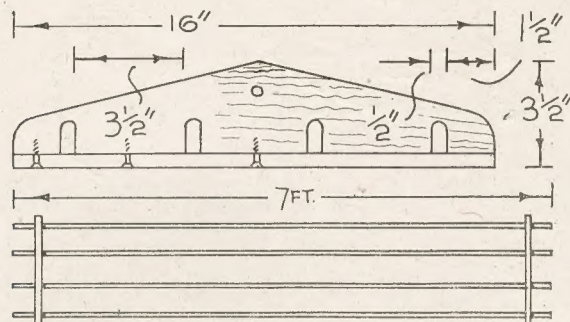
The rails are cut from $\frac{1}{2}$ in. wood to be $1\frac{1}{2}$ in. wide, with one edge rounded. This edge is kept uppermost so the clothes are not frayed or sharply creased while hanging up to dry. Once the rails (these could be cut from a 7ft. length of $\frac{1}{2}$ in. deal flooring or shelving) have been prepared, they are affixed to the ends as already described. Be sure to bore $\frac{3}{8}$ in. holes for the ends of the cord in the airer ends.

Pulleys and Cord

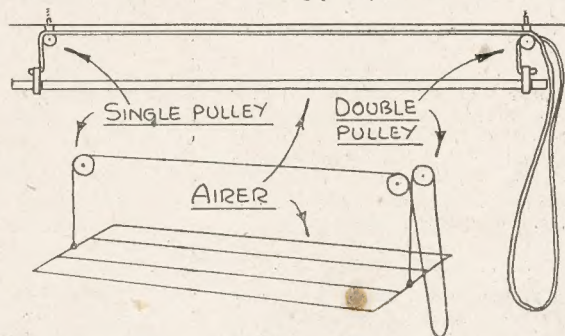
You will need to purchase a single pulley, with screw, and a double

As the screws of the pulley blocks require to be screwed into the ceiling, a step-ladder will be needed, including a floor awl or something similar. The awl is used to find the position of the ceiling rafter. You may have to make a few holes in the plaster, but it is worth while to find the rafter, as the airer, draped fully with damp clothes, is quite heavy.

You will probably find nothing better than the plaster laths. The pulley screws have not much of a grip in these laths, which are only $1\frac{1}{2}$ in. with by $\frac{1}{4}$ in. thick. The pulleys do get a firm grip on these, but as the laths are merely tacked to the rafters, or ceiling joists, the chances are that



Diagrams of various wooden parts with detail of pulley and lines



or lower it, without trouble. One has two ends to the cord and, after a lot of thinking, it seems that a third pulley is really necessary.

That double pulley is the answer to the whole problem, and we show, in outline, just how everything is arranged. It will be noticed that we have a double cord to work the airer. Our two cord ends go to the rail holders. Quite simple, you see—after you know! Ask somebody who doesn't know what to do, and he will probably give it up as a bad job.

The Ends and Rails

If you wish to make up the airer, prepare two ends as shown, cutting same from $\frac{3}{4}$ in. wood, or $\frac{1}{2}$ in. stuff, if nothing else is available. A hardwood is preferable, but deal or cedar would serve. You need two pieces 3 ins. wide. When slotted and shaped, $\frac{3}{4}$ in. wide by $\frac{1}{2}$ in. thick strips are screwed below the slotted edge.

Now, there is a reason for this—several reasons, in fact. One is that the slots are easily cut. The second is that by having your rails slightly wider, the strips, pressing against them by pressure of the fixing screws, holds them firmly in position. In the case of commercial sets, the rails are very loose, and easily pushed out of the holders, unless nails, or dowel

pulley, with screw. The screws, of course, are part of the pulley wheel mounting. The double pulley consists of a double-grooved wheel in its mounting. The wheel is thicker than the single pulley wheel. Although the thicker wheel is really a single wheel, it serves the purpose of a double wheel.

While buying the pulley blocks, also obtain a hank of $\frac{3}{8}$ in. braided cord and a metal fastening cleek. The latter screws to the wall to serve as an anchorage for the airer cord.

The next thing is to know where to arrange the airer. In the case of a kitchen or parlour house, the usual place is at the landing, just above the stairs, high up where it is not readily seen. In other words, we make use of the ceiling of the landing, which is next to the roof. The airer, where a parlour house is concerned, is suspended directly over the stairs. It can be lowered to the banister rail, where one can reach over and drape the clothes easily over the rails.

FRETSAW BLADE HOLDER

A useful holder on the work-table for your fretsaw blades can be made by gluing two or three cotton reels together so their central hole form a cylindrical tube in which the blades will stand. Get the heaviest reel at the bottom for weight.

they may pull away, bringing much of the ceiling plaster with them.

Assuming you manage to get the pulleys up strongly, the cord is threaded through them as indicated, the ends being brought through the holes in the airer ends and a single knot tied to prevent the cord pulling through. Be sure to have the cord properly fixed through the pulley wheel mounting. If done incorrectly, the mounting will fray the cord by constant rubbing of the cord against the sharp edges.

Horizontal Lift

By pulling on the double cord, the airer should rise up on a horizontal level. If not level, straighten by pulling on one of the cords. When straight, tie a knot in the double cord. This will ensure that the airer rises and lowers on a level with the ceiling. The knot, if possible, should be made at a point where it can be hooked to the cleek. It should not interfere with the lowering of the airer, i.e., by coming up against the double pulley.

Incidentally, make a point of applying thick oil to the pulleys prior to fixing them to the ceiling. It will be difficult to lubricate them once affixed and the airer suspended.

A Craftsman's Notebook

Keep Bottles Labelled

UNLESS they are labelled there is always a possibility of confusion over the contents of different bottles. Amateur chemists, photographers, and others who include bottles among their equipment ought, therefore, to make sure that each is clearly marked before it takes its place on the workroom shelf.

My paper labels usually have rounded corners. If not, they are trimmed round, as I find that these keep down better than the square corners. In cases where stock solutions are made up at home I find it useful also to include the formula on the label, so there will be no doubt about the exact strength when further supplies have to be made.

A tip when pouring from a bottle is to pour from the side opposite the label, in order that any drips which happen to run down the side will not obliterate the lettering. Many workers preserve the labels with a coat of clear varnish, carried beyond the edges of the paper on to the glass itself.

A Whitewashing Hint

WHEN whitewashing ceilings I have the pleasing knack of keeping the handle of the brush almost dry, and amateurs who always get the whitewash streaming down the handle, and sometimes their arms too, occasionally ask how I manage otherwise.

Being only an amateur decorator I am actually as surprised as they at my success in this direction. What I would suggest, however, is to take up the whitewash on the tips of the bristles only, never dipping the brush so deeply that it reaches the tin where the bristles join the handle.

Another good idea appears to be to get well up on the steps so the arm can be slightly bent to reach the ceiling around one easily. To work from a low level, with the brush straight above one's head, often seems to be a cause of the whitewash running down.

Chiefly about Collecting

EARLIER this year the Cartophilic Society and the Cameric Club—two main organizations of cigarette card collectors—held their first exhibition of cards. One of the rarest sets is said to be a series of 100 ships issued by Wills in 1897.

A particularly valuable autograph is that of William Shakespeare, the two or three remaining letters that bear his signature being valued at something like £200,000 apiece. Nelson's signature is said to have

fetches £20, and that of Charles Dickens over £36.

Matchbox labels valued at about £100 were to be seen at a rally of philumenists (the more technical name for the collectors of matchbox covers). Also exhibited were a hundred or so different varieties of match, some a foot in length.

An Oxford collector, specializing in cuttings, pictures, and programmes connected with entertainment, is

reported to have got together between one and two million such items.

His collection, started when he was 15, includes almost every film star ever known, and in some cases—Deanna Durbin and Charlie Chaplin, for instance—the pictures number as many as a thousand.

To help in compiling a survey of racial origins, university scientists enlisted the aid of a trichologist to collect, classify, and catalogue samples of hair from all the races of the world.

The Craftsman

NOVELTY KEY RACK

AT coming-of-age parties it is often the

custom to present the person now arrived at man's (or woman's) estate with an outside "key of the door". These, made in silvered cardboard, can be obtained at stationers' shops, but are comparatively expensive. This article shows how to cut one from fretwood, and follows one we had on a variety of types some time ago.

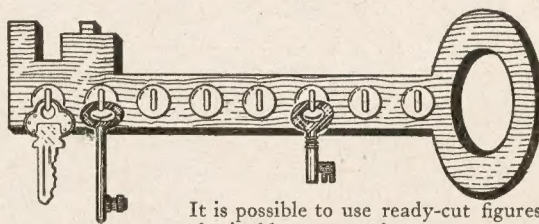
Only a small number of people are, at any given moment, interested in coming-of-age parties. The same "key", however, with only slight adaptation, can be used to form a key rack as illustrated. The reader who makes up novelties for sale will thus find a double use for this giant "key", and those with treadle machines can cut two or more at a time.

The Pattern

A pattern is first prepared. This is done by the usual method of "squaring up". In the diagram, the large squares are 1 in. and the smaller ones $\frac{1}{2}$ in. If only one key is required, a paper pattern is made and pasted down in the ordinary way, but if it is anticipated that several will be required, a cardboard template can be made and pencilled round.

Though large sheets of plywood are, at the time of writing, not too plentiful and correspondingly expensive, there is any amount of plywood "offcuts" for sale at very cheap prices, and these will do very well for the present job.

By the way, the figures 21 are cut out separately and mounted afterwards.



It is possible to use ready-cut figures obtainable at some shops.

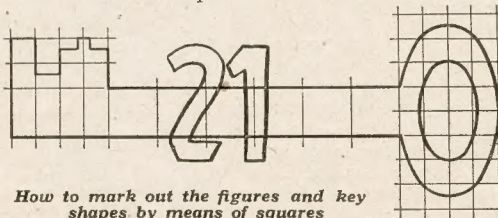
The Numerals

For a "twenty-first" key, comparatively thin wood can be used, but thicker wood is needed for the key rack, to provide some grip for the screws on the hooks. A strip of wood about 1 in. by $\frac{3}{4}$ in. can be glued to the back of the key-rack for this purpose.

For a "twenty-first" key, the figures are, as already mentioned, glued on after the main key has been made and trimmed up. A good finish would be to paint thin glue all over one side and then sprinkle imitation "frost" or "glitter" (such as is sold for Christmas decorations) on it.

When dry, the surplus powder can be dusted off, and the other side treated. A bow of white ribbon completes the job, though, as the recipient will probably be expected to wear the key round his neck, a length of white silk cord (e.g. parachute cord) should be provided.

For the key rack, the wood should be stained and polished and some cup-hooks or key hooks inserted as shown. The rack can either be fixed directly to the wall, or hung up, like a picture.



How to mark out the figures and key shapes by means of squares

The sails revolve when you pull along this SIMPLE TOY WINDMILL

HERE is another attractive mechanical toy to make, which works as you pull it along. Our illustration gives an idea of how it will look when completed and painted with brilliant paints or enamel.

The length of the toy is 8 ins. and it is 5½ ins. wide and 9½ ins. high. It is made up almost entirely from ¼ in. wood, but the sails could, if desired, be of ½ in. wood or even stout card.

The simple mechanism which turns the sails as the toy is pulled along is explained in the diagrams, but it might be said here that from a pulley on the axle of the front pair of wheels a belt extends and is carried round a second pulley on an axle immediately beneath the windmill itself. Then from this axle a belt extends upwards to the axle and pulley bearing the sails.

The Mechanism

It is thus only a matter of cutting a few pulleys and washers, fixing them to the cross axles and finally adding the belts, which might consist of fine string. If elastic bands are substituted for string belts, then they will have to be threaded on the axles

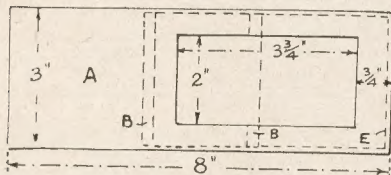


Fig. 1—Outline of floor and opening

during assembling of the parts of the toy.

The first part to make will be the floor (A) shown in Fig. 1. Mark this out in pencil direct on to wood and cut with the fretsaw. Follow this by setting out and cutting the front and back walls (B) of the mill, see Fig. 2. Having made one piece, lay it on a second and mark round it to get the exact duplicate shapes. See the holes for the axles of the sails are identical on both pieces.

Sides and Roof

Next make the sides (C) of the mill. These are simply two pieces measuring 4½ ins. by 2 ins. They are glued between the front and back shown in Fig. 3 and by the dotted lines in Fig. 2. This completes the construction of the mill except for the roof which will be added later.

It might, however, be said now that the roof can be formed from tin or stout card bent to the pointed shape of the front and back and pinned on. A detail of part of the roof is shown in Fig. 3.

The two side rails (D) of the floor are next marked and cut. These measure 8 ins. by 1½ ins., and are glued and pinned to the edges of the floor, see Fig. 4. There are three axle holes in each piece, one hole in the middle of its length and one towards each end at 1½ ins. from the end as Fig. 4 shows.

It will be observed from Fig. 1 that the mill itself is glued and nailed or screwed to the top of the floor in the position shown by the cross dotted lines (B). There is an open space left

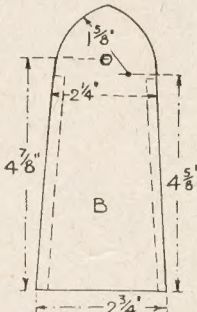


Fig. 2—How to mark the sides

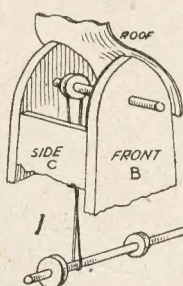


Fig. 3—How the sails are driven from the axles

in the floor towards the front of the mill, intended to gain easy access if required to the pulleys and belting. This space is later covered over by a piece of wood measuring 2½ ins. by 2½ ins. and it may be seen in the sketch of the finished toy.

The wheel axles are 5½ ins. long, and this length suits the ready-made wheels provided by Hobbies, Ltd. The wheels are 2½ ins. diameter and

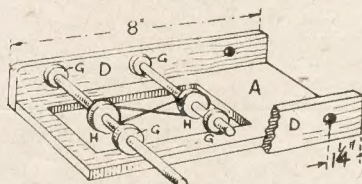


Fig. 4—An underview showing pulley drive

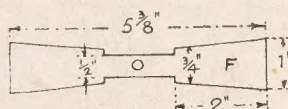
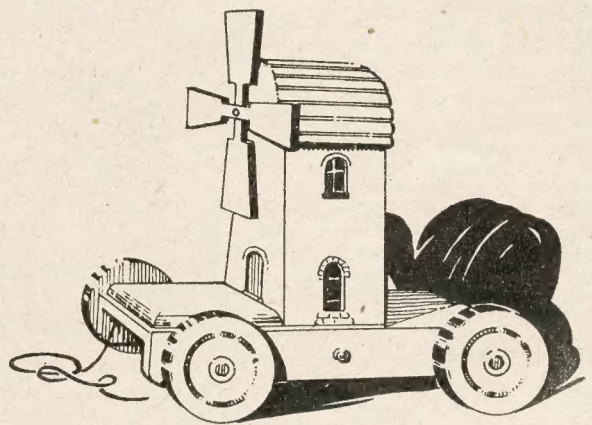


Fig. 5—Outline of twin sails



½ in. thick and make a very substantial bearing for the toy. The outer faces of the wheels come flush with the ends of the axles, but on the latter will be threaded, during the building up, the washers (G), Fig. 4, which will keep the wheels evenly and properly spaced.

The centre axle will also have similar washers (G) put over it. The washers, of course, are placed so they come on the inside of the rails (D), see Fig. 4. The pulleys (H) are 1½ ins. in diameter, are made from the ¼ in. wood and grooved deeply with either a rat-tail or three-sided file. The former, it will be found, makes the better and more suitable groove. Glue on the pulleys as shown in position in Fig. 4, and later connect up with the belt shown.

The Sails

The shape for cutting one pair of sails is given in Fig. 5, and they may be cut from thin wood or stout card. Cut an axle for the sails from ¼ in. diameter rod about 3 ins. long, and glue on a pulley similar to those below. Spacing washers may be added as required, and the sails glued on to a washer on the axle outside to form a stiff fixing.

The method of connecting the lower axle with that on the sails is shown in Fig. 3, the belt passing round the lower axle and over the pulley above. See that the axles turn freely in their bearings, and make quite sure the washers are spaced properly to give adequate clearance for the wheels to have free movement.

The completed model can be painted in bright colours of brown, red and black lines. Be sure not to get paint to the working parts where it is likely to hinder the smooth running of the model.

The handyman metal worker should try his hand at A METAL SINK TIDY

THIS useful kitchen utensil is quite easy to make, and will provide a handy receptacle for tea leaves, etc., making the bugbear of washing-up much easier. It fits into one corner of the sink, and having a perforated bottom, lets out all water whilst retaining the leaves.

To construct, you will require three strips of material as follows: One 8½ ins. by 2½ ins.; one 8½ ins. by 2½ ins.; and one 8 ins. by 2½ ins. In addition you will need a triangular piece for the bottom (Fig. 1).

The Side Pieces

To facilitate reference we will call the three side pieces A, B and C, and the strips must be marked out and cut as per diagram (Fig. 2).

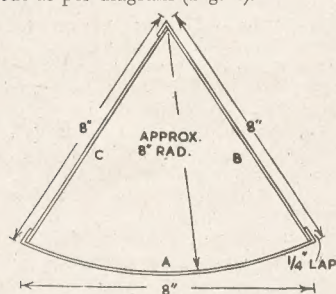


Fig. 1—Plan view and details

With the aid of the bending irons and cramps, fold over the ¼ in. strip at the top of each piece. As your pieces may be longer than your bending irons, it will be necessary to fold each strip in two halves.

After folding, lay the strips on your bench iron and, using your mallet, knock each fold right down flat. This is known as "edging," and you will achieve a much neater finish if you travel along the whole fold, easing it down equally, rather than trying to knock down flat a bit at a time. If you do the job the latter way the resulting edge will present a rough and uneven appearance. When flat down, the fold may be smoothed over by lightly tapping with the hammer.

Next, fold the bottom edges, again using your bending blocks, but this time do not knock flat. Instead, leave

them at right angles to form supports for the bottom when inserted.

The next job is to fold the corner supporting laps. Obviously, you cannot get the strips into your bending blocks, so these folds will have to be bent over on the edge of your bench iron, using the mallet. Ease the folds over equally, a little at a time.

With the bottom looking inwards, lay strip A on the bench iron, holding B side in the correct position and solder together in the corner, allowing the solder to penetrate well into the joint.

You can insert C piece into position, soldering likewise. Now you have A, B, and C soldered together, forming a perfect triangle, and your sink tidy begins to take shape.

Using the thumbs, gently bend A strip outwards, until it is shaped into

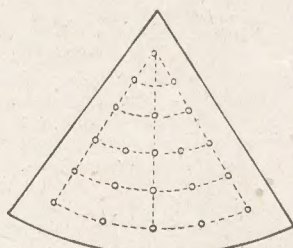


Fig. 3—Draining holes pattern

a gradual arc. You will now appreciate why the notches were cut in the bottom fold of this particular piece, as without them, it would have been impossible to bend into an arc as required. Where the folded top edges

join together, fill up the slight gap with solder, filing smooth afterwards. This will give a smooth unbroken top edging to the finished job.

The Bottom

Get a piece of material large enough for the bottom, but before cutting, mark out in a symmetrical pattern the holes for water drainage. These must be punched out on a piece of lead or hard wood, but in this case the resultant countersinking must not be hammered back. All that is necessary is to

file off the sharp burrs on the back side with a file.

When the job is finished, these countersinks will elevate the bottom slightly and allow the water to drain away.

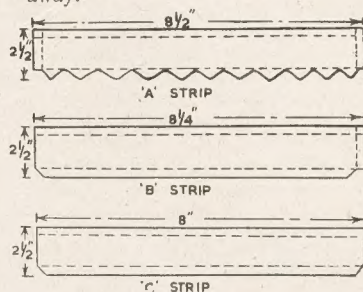


Fig. 2—Outline of strips

Make sure the bottom is a good fit before inserting. You can mark it out to the exact shape and size by laying the completed side portion upside down on your material and marking round the inside, taking care to get your whole pattern central.

After inserting the bottom, turn the whole job upside down, holding the bottom in position with the left hand. Tack in about three places and then solder right round the outside, allowing the solder to run well into the supporting folds.

Clean off flux, dry thoroughly, and finish by giving at least three coats of white enamel. You should now have a sink tidy of which any housewife will be proud, and the satisfying knowledge that you have made it yourself.

Stamp Collecting—(Continued from page 69)

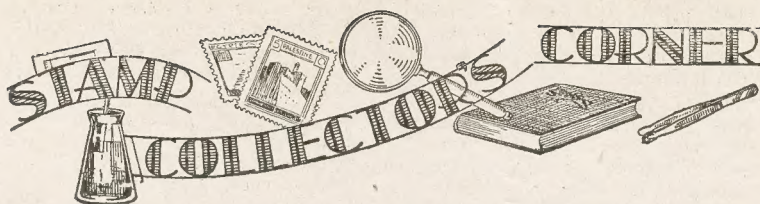
Then there are the Gandhi memorial stamps from India and also the Olympic Games issue of Great Britain which has been overprinted and surcharged for use in the areas around the Persian Gulf. Monaco has also issued a very fine set of stamps in commemoration of the Olympic Games with some beautiful pictures of an athletic nature. Athletics, rowing, swimming, skiing and sailing

are all depicted.

Lastly the United States of America has not been behind! Very far from it in fact, for it has issued too many for the average collector to keep count. This is a pity as it detracts from the interest of those which are worth having.

Unfortunately, Great Britain has herself issued (or rather the Colonies have) a great number of high value

stamps for the Silver Wedding. Now, it is almost impossible for any except the rich to be able to afford all these. The full set costs £47, and many of the stamps are of such high value that their postal use will be very limited indeed. So one wonders if the stamps are issued in order to defray postage of normal nature or are they issued in order to collect money from collectors?



NOTES ON NEW ISSUES

It is some considerable time since we discussed the stamps that have appeared among the new issues, so there is some leeway to make up.

Once again our thanks are due to Mr. Donaldson, of Wellington, New Zealand for the first item which is illustrated. Readers will recall that he also very kindly sent the New Zealand Life Insurance set which gave a very interesting view of many of the lighthouses of New Zealand, also the Otago Centennial set.

This time he sends the three denominations which comprise the set for the new stamp issuing territory of the Tokelau Islands. Formerly they used the stamps of New Zealand but now with the new administration they have their own.

Nice Views

These islands are situated some 350 miles north-east of Samoa. To appreciate these stamps properly, a good magnifying glass is essential. Look, for instance at the $\frac{1}{2}$ d. value which is illustrated. On the left of the central picture is a map showing the situation of the three islands in the Pacific Ocean. Then, on the right of the picture, which is quaintly framed by sloping palm trees, there is a map of the island of Atafu.

The 1d. stamp gives a picture of a



Commemorating Pakistan
Independence

native constructed hut and also a map of the island of Nukunono, while the 2d. value has a general view and a map of the island of Fakaofu. So you see that a full set of three stamps not only lets you know the proper position of the group but also gives you a detailed map of each island.

Sierra Leone

This treatment reminds one of the $\frac{1}{2}$ d. value of Sierra Leone. the Wilberforce issue which gives a map of Africa showing the position of Sierra Leone, then a large map of the Colony. As the price of the set is quite low, readers should be able to obtain this interesting addition to the stamp album.

The 12 annas stamp from India which is shown was issued to commemorate the Indian to United Kingdom Air Service and was valued only for postage on the first flight. The aeroplane shown is a four-engined Constellation. Naturally, a specimen used for franking mail on this first flight should become a desirable item and most certainly should be kept on the envelope—on no account be soaked off.

Pakistan has issued four stamps to commemorate her independence.



Tokelau Islands—an attractive view set

One of these, the $2\frac{1}{2}$ annas which shows a picture of the entrance to Karachi Airport, is shown here. The other values are the $1\frac{1}{2}$ annas, with a view of the Assembly Buildings at Karachi; the 3 annas, with the Gateway to Lahore Fort; and the 1 Rupee which has a crescent in the centre and two stars in the top corners. Each stamp bears the date 15th August, 1947—the date of Independence.

India and Gold Coast

India also issued a set of stamps to mark the event. The $1\frac{1}{2}$ annas shows native carving, the 3 annas the Indian National Flag and the 12 annas a modern four-engined aircraft.

One of the most interesting sets which has appeared for some time is that which comes from the Gold Coast. Readers will recall that for some time the stamps which have come from this Colony have all been of the same type of design. There was a picture of Christiansborg Castle at Accra with a small medallion portrait of either King George V or VI.

Now we have a different design for each value, but retaining a small portrait. The $\frac{1}{2}$ d. shows a mounted constable in an ancient archway, the 1d. a much-improved picture of the castle, the $1\frac{1}{2}$ d. shows some native emblems of the Joint Provisional Council, and on the 2d. there is a picture of a native beating two drums with the inscription "Talking Drums". Everyone has heard of the

marvellous way in which news is transmitted by means of the beating of these drums.

A very nice map of West Africa marking in the areas surrounding the Gold Coast appears on the $2\frac{1}{2}$ d., while the 3d. informs us that one of the products of the Gold Coast is manganese—that element essential to the making of certain types of steel.

Cocoa Farming

Lake Bosumtwi is shown on the 4d., but the most interesting of the designs come on the 6d. and the 1/-.



India—First flight only

The former is shown here, and as you can see it shows a cocoa farmer in the act of cutting off from the tree one of the cocoa pods. It shows very well indeed how quaintly these pods grow, coming as they do direct from the branch without any leaves near.

The higher value then shows natives splitting open these pods in order to get at the beans. These beans are then fermented and dried and later made into chocolate or else into cocoa powder as we know it. The 2/- value reminds us of the Colonial soldiers, as it is a picture of these soldiers trooping the colour.

Among the other issues that we



Growing Chocolate on
the Gold Coast

can do no more than mention are the new Australian stamp, the $2\frac{1}{2}$ d. issue, to commemorate W. J. Farrer who did so much to further the growth of wheat; and the Egyptian stamp showing the entry of Egyptian troops into Gaza.

(Continued foot of page 68)

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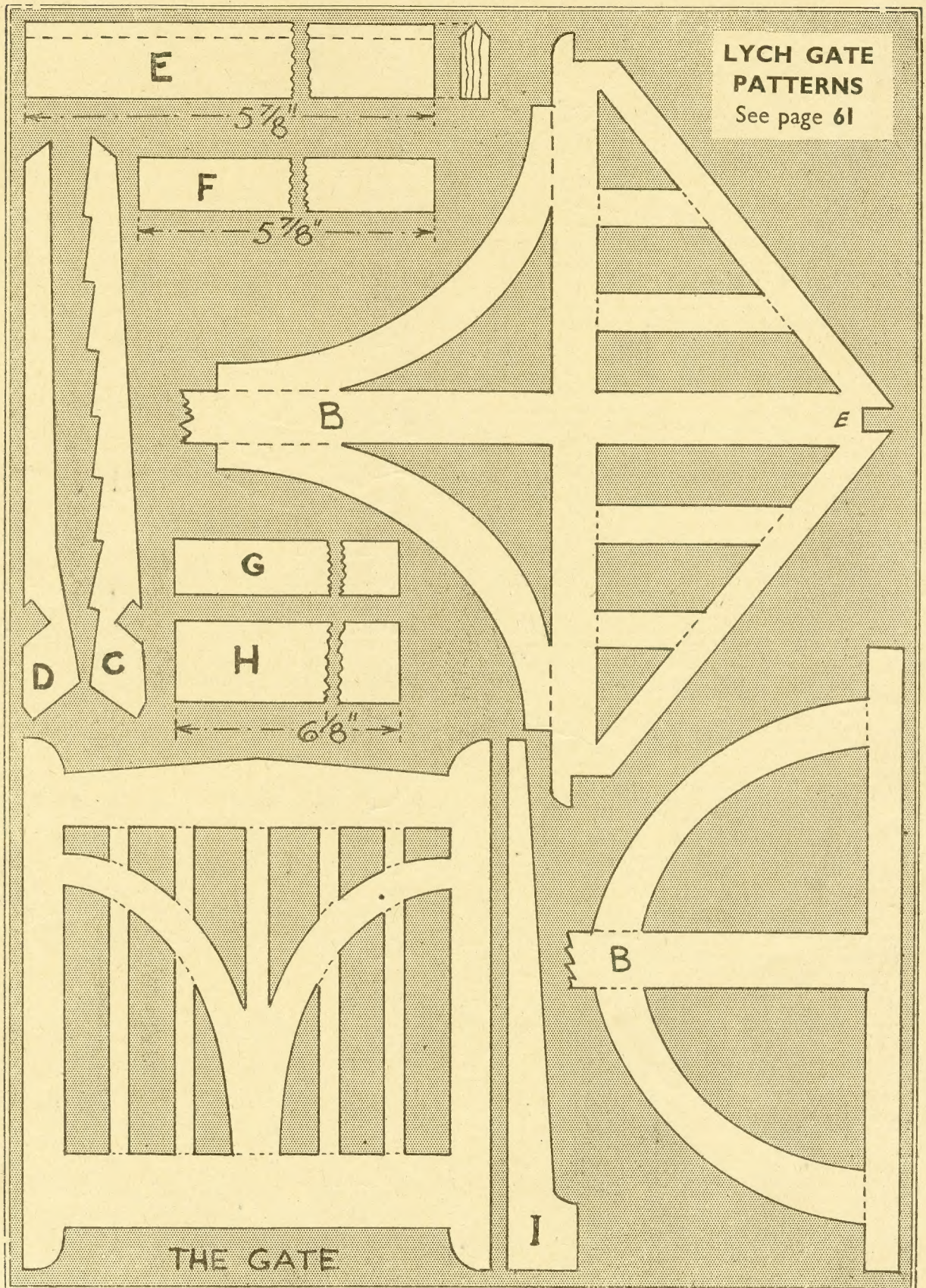
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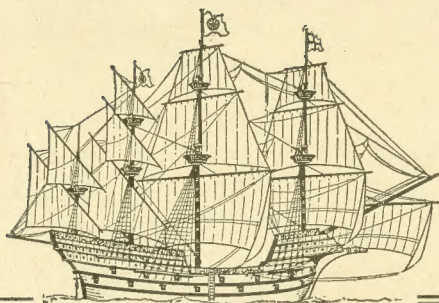
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(Continued on Cover IV)

**LYCH GATE
PATTERNS**

See page 61





Plans for a model of **THE GREAT HARRY**

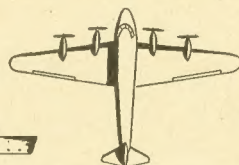
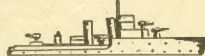
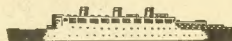
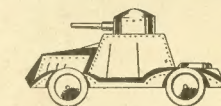
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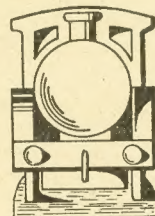
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